

IN THE CLAIMS

The status of the claims is presented below.

Claims 1-133: (Canceled).

134. (Previously Presented): A vaccinating composition against a *Plasmodium* parasite which is infectious in man, comprising as an active principle a recombinant protein whose polypeptide sequence comprises:

- a) a 19 kilodalton (p19) C-terminal fragment of a surface protein 1 of a merozoite form (MSP-1 protein) of a *Plasmodium* parasite that is infectious in man, other than *Plasmodium vivax*; which induces an immune response and which can inhibit parasitemia *in vivo* in a host infected with said *Plasmodium* parasite; wherein said C-terminal fragment remains anchored to the surface of said *Plasmodium* parasite at an end of its penetration phase into human erythrocytes during an infectious cycle and wherein said recombinant protein comprises conformational epitopes, which are contained in two epidermal growth factor regions and is unstable in a reducing agent, wherein said 19 kilodalton (p19) C-terminal fragment of the surface protein 1 of the merozoite form (MSP-1 protein) has atomic coordinates in Annexes I or III; and NMR fingerprints of Figures 12.0a to 12.0c or 12.2a to 12.2c ; and
- b) alum.

Claims 135-138: (Canceled).

139. (Previously Presented): The vaccinating composition of Claim 134, wherein said recombinant protein further comprises, upstream of said 19 kilodalton (p19) C-terminal fragment, a polypeptide containing less than 50 amino acids of a C-terminal end of p33 of a MSP-1 protein of a *Plasmodium parasite*.

140. (Previously Presented): The vaccinating composition of Claim 139, wherein said C-terminal end of p33 is obtained from a cleavage of p42 of a same MSP-1 protein of a *Plasmodium parasite*.

141. (Currently Amended): The vaccinating composition of Claim 139, wherein said polypeptide contains less than ~~40~~ 35 amino acids.

142. (Previously Presented): The vaccinating composition of Claim 140, wherein said C-terminal end of p33 is that end that is conserved in *P. falciparum*.

143. (Previously Presented): The vaccinating composition of Claim 134, wherein said C-terminal p19 fragment remains anchored to the surface of said *Plasmodium parasite* via a glycosylphosphatidylinositol group

Claim 144: (Canceled).

145. (Previously Presented): A vaccinating composition against a *Plasmodium* parasite which is infectious in man, comprising as a active principle a recombinant protein whose polypeptide sequence comprises:

- a) 19 kilodalton (p19) C-terminal fragment of a surface protein 1 of a merozoite form (MSP-1 protein) of a *Plasmodium cynomolgi* parasite that is infectious in man, and wherein said recombinant protein comprises conformational epitopes, which are contained in two epidermal growth factor regions and is unstable in a reducing agent; and
- b) alum.

Claims 146-147: (Canceled).

148. (Previously Presented): The vaccinating composition of Claim 134, wherein said recombinant protein is conjugated to a carrier molecule.

149. (Previously Presented): The vaccinating composition of Claim 145, wherein said 19 kilodalton (p19) C-terminal fragment of the surface protein I of the merozoite form (MSP-1 protein) has the atomic coordinates in Annex I; and the NMR fingerprints of Figures 12.0a to 12.0c.

150. (Previously Presented): The vaccinating composition of Claim 143, which is hydrosoluble.

151. (Previously Presented): A recombinant protein whose polypeptide sequence comprises:

- (a) leader sequence comprising thirty-two amino acids of a surface protein 1 of a merozoite form (a MSP-1 protein) of *Plasmodium vivax* from Met<sub>1</sub> to Asp<sub>32</sub>; and
- (b) a 19 kilodalton C-terminal fragment of a surface protein 1 of a merozoite form (a MSP-1 protein) of *Plasmodium falciparum* from Asn at amino acid position 3 to Ser at amino acid position 95 of SEQ ID NO: 1 which fragment induces an immune response which can inhibit parasitemia *in vivo* in a host infected with a *Plasmodium* parasite.

152. (Previously Presented): A recombinant protein whose polypeptide sequence comprises:

- (a) a leader sequence comprising thirty-two amino acids of a surface protein 1 of a merozoite form (a MSP-1 protein) of *Plasmodium vivax* from Met<sub>1</sub> to Asp<sub>32</sub>; and
- (b) a 19 kilodalton C-terminal fragment of a surface protein 1 of a merozoite form (a MSP-1 protein) of *Plasmodium falciparum* from Asn at amino acid position 3 to Ile at amino acid position 116 of SEQ ID NO: 4 which fragment induces an immune response which can inhibit parasitemia *in vivo* in a host infected with a *Plasmodium* parasite.

153. (Currently Amended): A recombinant protein whose polypeptide sequence ~~consisting~~ consists essentially of:

- (a) a leader sequence comprising thirty-two amino acids of a surface protein 1 of a merozoite form (a MSP-1 protein) of *Plasmodium vivax* from Met<sub>1</sub> to Asp<sub>32</sub>; and
- (b) a 19 kilodalton C-terminal fragment of a surface protein 1 of a merozoite form (a MSP-1 protein) of *Plasmodium cynomolgi* from Lys<sub>276</sub> to Ser<sub>380</sub> as shown in SEQ ID NO: 11 which fragment induces an immune response which can inhibit parasitemia *in vivo* in a host infected with a *Plasmodium* parasite, and wherein the fragment has atomic coordinates in Annex I; and NMR fingerprints of Figures 12.0 a to 12.0c.

154. (Previously Presented): The recombinant protein of Claim 151, wherein said 19 kilodalton (p19) C-terminal fragment of the surface protein 1 of the merozoite form (MSP-1 protein) has atomic coordinates in Annex III; and NMR fingerprints of Figures 12.2a to 12.2c.

155. (Previously Presented): The recombinant protein of Claim 152, wherein said 19 kilodalton (p19) C-terminal fragment of the surface protein 1 of the merozoite form (MSP-1 protein) has atomic coordinates in Annex III; and NMR fingerprints of Figures 12.2a to 12.2c.

Claim 156: (Canceled).

157. (Previously Presented): The recombinant protein of Claim 151, which further comprises, upstream of said 19 kilodalton (p19) C-terminal fragment, a polypeptide containing less than 50 amino acids of a C-terminal end of p33 from a MSP-1 protein of a *Plasmodium* parasite.

158. (Previously Presented): The recombinant protein of Claim 152, which further comprises, upstream of said 19 kilodalton (p19) C-terminal fragment, a polypeptide containing less than 50 amino acids of a C-terminal end of p33 from a MSP-1 protein of a *Plasmodium* parasite.

159. (Previously Presented): The recombinant protein of Claim 153, which further comprises, upstream of said 19 kilodalton (p19) C-terminal fragment, a polypeptide containing less than 50 amino acids of a C-terminal end of p33 from a MSP-1 protein of a *Plasmodium* parasite.

160. (Previously Presented): The recombinant protein of Claim 157, wherein said C-terminal end of p33 is obtained from a cleavage of p42 of a same MSP-1 protein of a *Plasmodium* parasite.

161. (Previously Presented): The recombinant protein of Claim 158, wherein said C-terminal end of p33 from a cleavage of p42 of a same MSP-1 protein of a *Plasmodium* parasite.

162. (Previously Presented): The recombinant protein of Claim 159, wherein said C-terminal end of p33 is obtained from a cleavage of p42 of a same MSP-1 protein of a *Plasmodium* parasite.

163. (Currently Amended): The recombinant protein of Claim 157, wherein said polypeptide contains less than ~~40~~ 35 amino acid residues.

164. (Currently Amended): The recombinant protein of Claim 158, wherein said polypeptide contains less than ~~40~~ 35 amino acid residues.

165. (Currently Amended): The recombinant protein of Claim 159, wherein said polypeptide contains less than ~~40~~ 35 amino acid residues.

166. (Previously Presented): The recombinant protein of Claim 152, wherein said 19 kilodalton C-terminal fragment remains anchored to the surface of said *Plasmodium* parasite via a glycosylphosphatidylinositol group.

167. (Previously Presented): An oligomer of the recombinant protein of Claim 151.

168. (Previously Presented): An oligomer of the recombinant protein of Claim 152.

169. (Previously Presented): An oligomer of the recombinant protein of Claim 153.

170. (Previously Presented): The oligomer of Claim 167, wherein said oligomer comprises from 2 to 50 monomer units of a sequence of said recombinant protein.

171. (Previously Presented): The oligomer of Claim 168, wherein said oligomer comprises from 2 to 50 monomer units of a sequence of said recombinant protein.

172. (Previously Presented): The oligomer of Claim 169, wherein said oligomer comprises from 2 to 50 monomer units of a sequence of said recombinant protein.

173. (Previously Presented): The recombinant protein of Claim 151, which is conjugated to a carrier molecule.

174. (Previously Presented): The recombinant protein of Claim 152, which is conjugated to a carrier molecule.

175. (Previously Presented): The recombinant protein of Claim 153, which is conjugated to a carrier molecule.



176. (New): A vaccinating composition against a *Plasmodium* parasite which is infectious in man, comprising as an active principle a recombinant protein whose polypeptide sequence comprises:

- a) a 19 kilodalton (p19) C-terminal fragment of a surface protein 1 of a merozoite form (MSP-1 protein) of a *Plasmodium* parasite that is infectious in man, other than *Plasmodium vivax*; which induces an immune response and which can inhibit parasitemia *in vivo* in a host infected with said *Plasmodium* parasite; wherein said C-terminal fragment remains anchored to the surface of said *Plasmodium* parasite at an end of its penetration phase into human erythrocytes during an infectious cycle, wherein said recombinant protein comprises conformational epitopes, which are contained in two epidermal growth factor regions and is unstable in a reducing agent and further comprises upstream of said 19 kilodalton (p19) C-terminal fragment, a polypeptide containing less than 50 amino acids of a C-terminal end of p33 of a MSP-1 protein of a *Plasmodium* parasite; and
- b) alum.

Application No. 09/134,333

Reply to Office Action of December 19, 2005

SUPPORT FOR THE AMENDMENTS

Claims 141, 153 and 163 to 165 have been amended. Support for the recitation of 35 amino acids appears at least on page 9 of the specification as filed. Claim 176 has been added, which is the combination of the subject matter of Claim 134 and Claim 139. Accordingly, no new matter is believed to have been added to the present application by the amendments submitted above.